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we were perfectly ravenous, so much so, that on a moderate calculation, upwards of seven thousand penguins were eaten during our stay, which nothing but the most absolute necessity could have induced us to touch; and even portions of the sea-leopard, fried in their own blubber, were accounted palatable food. Notwithstanding this, we did our work; and, being allowed a boat and four men, I surveyed the island, sleeping at night on the cindery beach, with no other covering than a canvass tent.

During the survey, several timbers of a ship of large dimensions were seen on the N.E. side of the island, half buried in the sand, together with some casks and iron hoops; and on the edge of a small cove we also found various relics of former visiters—probably sealers, as there were buildings whose blackened surfaces exhibited the action of fire. Having observed a mound on the hill immediately above this cove, and thinking that something of interest might be deposited there. I opened it; and found a rude coffin, the rotten state of which bespoke its having been long consigned to the earth, but the body had undergone scarcely any decomposition. The legs were doubled up, and it was dressed in the jacket and cap of a sailor, but neither they nor the countenance were similar to those of an Englishman. The stones were replaced, and a post erected, with a notice, in hopes of protecting this humble monument from further intrusion.

On a point of the cove in which the ship was secured, we buried a register thermometer, so that any future visiter might become acquainted with the extreme ranges of temperature in this climate.

We took the hint of the freezing over of the cove, and effected our retreat, with much difficulty and severe labour, from the fury of the gales, whose violent gusts had before blown down all our tents, and broken many of the instruments. We quitted it on the 8th of March, just two months from our arrival, amidst the acclamations of thousands of penguins, who croaked a most discordant chorus; and indeed it was a day of rejoicing to us also when the shores of Deception faded from our view.

VII.—Account of the Cocos, or Keeling Islands. Transmitted by Rear-Admiral Sir E. W. C. R. Owen, K.C.B., and communicated by John Barrow, Esq., F.R.S. Read 24th January, 1831

THE Cocos or Keeling Isles extend from 12° to 12° 14′ S. latitude, in 97° 4′ E. longitude; and are now in the occupation of two English gentlemen, Alexander Hare, Esq., and Captain J. C. Ross, who have undertaken to cultivate and render them productive. So far as appears, they are entirely coralline in their

formation,—the sand and fragments dug out of the wells near the middle of the isles, being altogether of the same material, rounded by attrition in water, with that which at present constitutes the shores and beaches. The circular form of the group, as well as of the detached northernmost or Keeling Isle, may, however, countenance the idea of their being originally based on submarine volcanoes long extinguished, though no traces of the occurrence of earthquakes, or other natural convulsions, are now discernible.

Around the exterior of the isles the shore is heaped up by the surf from twelve to twenty-one feet above the level of the sea (high water mark); and the interior is not in general elevated more than from three to six feet above that level.

The soil is mainly composed of fine calcareous sand; in some parts marly, in others consisting of rounded pieces of coral and shells, with a small mixture of vegetable earth. It is from one to two feet deep, and lies on a strong platform of aggregated coral and shells. Quantities of pumice-stone and lava are thrown on shore by the sea, which, by decomposition, gradually add some earthy matter.

The general produce of the isles is, first, the cocoa-nut palmtree, which, when properly thinned out, may be expected to yield as abundantly as in any part of the world.

Second.—A tree producing hard wood of a dark colour, fit not only for fuel, but for timbers of small craft, and vessels up to three hundred tons.

Third.—A tree having a leaf resembling in size and form the leaf of the boxwood. The timber is hard and heavy, of a reddish colour, fit for small parts of machinery and boats' timbers. The bark, having an uncommonly large portion of tannin, may be useful for making leather and preserving nets.

Fourth.—A large straight-growing tree, which furnishes poles and small spars for rafters. It is durable under cover, but subject to rapid decay when exposed to the weather.

Fifth.—Another large straight-growing tree, with leaves and fruit resembling the jack-in-the-box of the West Indies. The timber is, however, soft, and of little value.

Sixth.—A tree frequently of large dimensions, the wood of which decays even faster than it dries. Its leaves may be used as greens: they are good food for hogs; and, with the trunks, supply a considerable quantity of vegetable matter to the soil.

Seventh.—The tree called warroo by the Javanese. It is planted by them in front of their houses for the sake of its shade and flowers. The timber is useful and durable; and, when of large growth, the bark affords a material for making twine or fishing lines.

Eighth.—The chinkauen, or dadap, a soft-wooded, green,

thorny-barked tree; used in Sumatra for training the pepper vine

upon.

Ninth.—A tree whose fruit, when cut, resembles plum-cake, and may be pickled. Its root, grated and infused into a lye of potass, yields a scarlet dye.

There are a few other scattered trees and shrubby plants, which

furnish tolerable fire-wood, and grow near the shores.

Tenth.—Many species of creeping plants, one or two of which are highly antiscorbutic, and may be used as salading.

Eleventh.—Of grass there are about four species, all rough

and bitterish, and not relished by animals.

It may be noticed that all these productions are transportable by the sea, in which their seeds and roots long retain their germi-

nating power.

Two species of gannet, and the frigate bird, are particularly numerous about these islands, and many other oceanic birds visit them occasionally. A few cranes, bluish grey and white, sandpipers, and a species of sand-rail, are all the birds, not of the web-footed kinds, which are found here; and land crabs, good for food, are plentiful.

Turtles are very numerous, and may be caught, without diffi-

culty, in all seasons.

Fish of many species, nearly all of a good taste, exist in great abundance round the isles and throughout the bay. Ground sharks are not very numerous; but a small species, having black tips to the tail and fins, is rather plentiful. No poisonous fish have yet been found.

No seals or other amphibious animals, except turtle, have been

seen; nor any reptiles or snakes.

Since the establishment of the settlement, the following plants and animals have been introduced, and are likely to succeed:— Fig tree, red mulberry, shaddock, custard apple, orange, lime, langsap, jamboo, alay, tamarind, pomegranate, papau or papaya, mongua, tanjung, chilies, aloes, hedge plants, Hownang shrubs, sundry plants from Mauritius, lemon grass, and five species of good grass for cattle; the cotton-plant from Bourbon; sugarcane, two species; plantain and banana, seven species; tobacco; kladdy, an extremely farinaceous sort of large-sized pumpkin; gourds, brinjals, water-melons, sundry other Indian vegetables, sweet and common potatoes. While the sun is in the northern hemisphere, flag-leaved leek, parsley, celery, cos-lettuce, endive, mustard, cress, turnips, radishes, and cabbages, thrive; but they have not succeeded in obtaining seed from them. Maize, very productive, flourishes throughout the year, in which period four successive crops are obtained. Caffre corn, from the Cape of Good Hope, rises to nearly fifteen feet in height. Cattle, goats, hogs, poultry, ducks, geese, and turkeys, have also been imported. The climate, though warm, is perfectly salubrious. The range of the thermometer, in the hottest season, is from 78° to 86°, and in the coldest, from 72° to 81°. The general winds are from south to east, subject to interruptions from the vicinity of the north-west monsoon, which lasts from January to March. No two seasons have been as yet alike since the formation of the settlement, but until the present they have never had more than an occasional squall of a few hours continuance from the northward or westward.

The fresh water, obtained from wells dug on the isles, is good, wholesome, and abundant. The anchorage is safe—the narrow opening between the reefs off Horsburgh and Direction isles not affording ingress to any heavy sea, as was experienced during a late northerly gale. The channel leading into the inner anchorages has only three fathoms and three quarters at low water, and is tortuous and narrow for nearly a mile. No vessel drawing more than twelve feet water may safely sail in; but ships requiring heaving down, &c., may be warped for that purpose into the basin inside of Direction island. There can be, however, no occasion for entering the port beyond the outer anchorage, except for safety in time of war. The intricacy of the entrance is then an advantage.

High water is at about half-past four o'clock in the anchorage, on full and change. When the sun is near the equator, the two tides are nearly equal, and rise from three and a half to four feet. When the sun is near the southern tropic, his zenith, or evening, tide rises to from five to five and a half feet, and the morning tide to one and a half and three feet. The contrary happens when he is near the northern solstice.

VIII.—Notes respecting the Isthmus of Panama. Communicated by J. A. Lloyd, Esq. Extracts from them read 28th of February, and 14th of March, 1831.

[In November, 1827, Mr. Lloyd, who had served for some time previously on General Bolivar's personal staff, received from him a special commission to survey the Isthmus of Panama, in order to ascertain the most eligible line of communication across it, whether by road or canal. And the result of his operations, in so far as they regarded the level of the respective seas, and the elevation of the intervening Isthmus, has been already published in the Philosophical Transactions for 1830. p. 59.—The following supplementary information seems however still interesting; and is extracted from Mr. Lloyd's entire notes, communicated by him to the Royal Geographical Society, before his recent departure for the Mauritius.

His occupations while at home having put it out of his power to